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United States Patent [19]**Wieczorek et al.**[11] **Patent Number:** **5,557,076**[45] **Date of Patent:** **Sep. 17, 1996**[54] **CORDLESS POSITION DETECTION APPARATUS**[75] Inventors: **Rudi Wieczorek**, Munich; **Dietrich Hahn**, Neufahrn; **Josef Rohrmülle**, Fahrenzhausen, all of Germany[73] Assignee: **Mikron Gesellschaft Fur**, Eching, Germany[21] Appl. No.: **339,699**[22] Filed: **Nov. 14, 1994**[30] **Foreign Application Priority Data**

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[51] **Int. Cl.⁶** **G08C 21/00**[52] **U.S. Cl.** **178/19**[58] **Field of Search** 178/18, 19[56] **References Cited****U.S. PATENT DOCUMENTS**

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Primary Examiner—Stephen Chin*Assistant Examiner*—Paul Loomis*Attorney, Agent, or Firm*—Cushman, Darby & Cushman[57] **ABSTRACT**

A cordless position detection apparatus includes a position detection area and a pointer. A plurality of conductors are arranged side-by-side in the position detection area. The position detection area has a selection circuit for selecting single conductors, and a transmitting circuit that provides a transmitting signal having at least one harmonic to a selected conductor. A pointer for use with the position detecting area includes a resonance circuit which is tuned to an harmonic of the transmitting signal. The pointer is excited by the transmitting signal to oscillate and radiates a receiving signal. A receiving circuit in the detection apparatus detects the receiving signal in a selected conductor and processing means uses this received signal to determine a position indicated by the pointer.

56 Claims, 13 Drawing Sheets